

## Claims

1. Dental isolation material, containing:
  - 10 - 60 wt.-% water
  - 30 - 85 wt.-% C<sub>2</sub>-C<sub>4</sub> alcohol
  - 2 - 10 wt.-% polyvinyl alcohol and
  - 0 - 30 wt.-% acetone
2. Dental isolation material according to claim 1, containing:
  - 40 - 50 wt.-% water
  - 45 - 55 wt.-% C<sub>2</sub>-C<sub>4</sub> alcohol
  - 3 - 8 wt.-% polyvinyl alcohol
  - 0.1 - 5 wt.-% acetone
- a 3. Dental isolation material according to ~~either one of claims 1 and 2~~<sup>claim</sup>, characterized in that the C<sub>2</sub>-C<sub>4</sub> alcohol is ethanol.
- a 4. Dental isolation material according to ~~any one of claims 1 to 3~~<sup>claim</sup>, characterized in that the polyvinyl alcohol has a molecular mass greater than 60,000 g/mol.
- a 5. Dental kit, containing at least one isolating material according to ~~any one of claims 1 to 4~~<sup>claim</sup>.  
4.
6. Dental kit according to claim 5, characterized in that a transparent dental investment material is used, containing:
  - 10 - 30 wt.-% polyethylene glycol dimethacrylate,
  - 40 - 55 wt.-% polymethyl methacrylate,
  - 5 - 15 wt.-% highly disperse silicon dioxide
  - < 1 wt.-% photoinitiators, stabilizers,
  - 0 - 10 wt.-% polyethylene glycol and
  - 10 - 30 wt.-% of at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA.
- a 7. Dental kit according to ~~either one of claims 5 and 6~~<sup>claim</sup>, characterized in that a transparent dental investment material is used, containing:
  - 15 - 20 wt.-% polyethylene glycol dimethacrylate,
  - 50 wt.-% polymethyl methacrylate
  - 10 - 13 wt.-% of at least one compound from the group, urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA.
  - 10 wt.-% highly disperse silicon dioxide,
  - 0.4 - 0.6 wt.-% photoinitiators, stabilizers and
  - 5 - 10 wt.-% polyethylene glycol.

8. Dental kit according to <sup>claim</sup> ~~either one of claims 6 to 7~~, characterized in that the polyethylene glycol dimethacrylate has a molecular mass greater than 500 g/mol.
- a 9. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 8~~, characterized in that the polyethylene glycol dimethacrylate is solid at a temperature of approximately  $T = +20^{\circ}\text{C}$ .
- a 10. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 9~~, characterized in that the polymethyl methacrylate has a molecular mass greater than 160,000, an average grain size of 80 - 140  $\mu\text{m}$  and a benzoyl peroxide content less than 0.1 wt.-%.
- a 11. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 10~~, characterized in that the polymethyl methacrylate is a copolymer which has been made with up to 10 wt.-% of comonomers.
- a 12. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 11~~, characterized in that the polyethylene glycol is fluid at a temperature of approximately  $T = +20^{\circ}\text{C}$  and has an average molecular mass of  $\geq 200$  g/mol.
- a 13. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 12~~, characterized in that the urethane dimethacrylate has a minimum molecular mass at the level of 450 g/mol.
- a 14. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 13~~, characterized in that the polymethyl methacrylate is in the form of suspension polymerizate.
- a 15. Dental kit according to <sup>claim</sup> ~~any one of claims 6 to 14~~, characterized in that a dental material hardenable by electromagnetic radiation is used as dental plastic.
- a 16. Method for making a prosthesis, characterized in that at least one isolation material according to <sup>claim</sup> ~~any one of claims 1 to 4~~ is used.
17. Method for making a prosthesis by the following steps:
- Overmodeling a dental trial fitting with an investment material to create an individual flask or rim.
  - Curing the investment material by electromagnetic radiation,
  - Coating the inside of the polymerized investment material with an isolating material according to <sup>claim</sup> ~~any one of claims 1 to 4~~,
  - Pouring a dental plastic into the individual flask or rim and
  - Deflasking by shattering the investment material,

18. Method according to ~~any one of claims 16 to 17~~, characterized in that a transparent dental investment material is used, containing:

10 - 30 wt.-% polyethylene glycol dimethacrylate,  
 40 - 55 wt.-% polymethyl methacrylate,  
 5 - 15 wt.-% highly disperse silicon dioxide,  
 < 1 wt.-% photoinitiators, stabilizers,  
 0 - 10 wt.-% polyethylene glycol and  
 10 - 30 wt.-% of at least one compound from the group urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA,

19. Method according to ~~any one of claims 16 to 18~~, characterized in that a transparent investment material is used, containing:

15 - 20 wt.-% polyethylene glycol dimethacrylate,  
 50 wt.-% polymethyl methacrylate  
 10 - 15 wt.-% at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA,  
 10 - 13 wt.-% highly disperse silicon dioxide,  
 0.4 - 0.6 wt.-% photoinitiators, stabilizers, and  
 5 - 10 wt.-% polyethylene glycol.

20. Method according to ~~any one of claims 17 to 19~~, characterized in that the polyethylene glycol dimethacrylate has a molecular mass > 500 g/mol.

21. Method according to ~~any one of claims 17 to 20~~, characterized in that the polyethylene glycol dimethacrylate is solid at a temperature of approximately  $T = + 20^{\circ}\text{C}$ .

22. Method according to ~~any one of claims 17 to 21~~, characterized in that the polymethylene methacrylate has a molecular mass of > 160,000, an average grain size of 80 - 140  $\mu\text{m}$  and a benzoyl peroxide content < 0.1 wt.-%.

23. Method according to ~~any one of claims 17 to 22~~, characterized in that the polymethyl methacrylate is a copolymer which has been made with up to 20 wt.-% comonomers.

24. Method according to ~~any one of claims 17 to 23~~, characterized in that the polyethylene glycol is fluid at a temperature of approximately  $T = + 20^{\circ}\text{C}$  and has an average molecular mass of  $\geq 200 \text{ g/mol}$ .

25. Method according to ~~any one of claims 17 to 24~~, characterized in that the urethane dimethacrylate has a minimum molecular mass at the level of 450 g/mol.

26. Method according to ~~any one of claims 17 to 25~~, characterized in that the polymethyl

methacrylate is in the form of suspension polymerizate.

- a 27. Method according to <sup>claim</sup> ~~any one of claims~~ 17 to 26, characterized in that a dental material curable by means of electromagnetic radiation is used as dental plastic.
- a 28. Method according to <sup>claim</sup> ~~any one of claims~~ 17 to 27, characterized in that retentions are set up after carving and before coating.
- a 29. <sup>method of using</sup> ~~Use of~~ an isolating material according to any one of claims 1 to 4 for making a total or partial prosthesis.
- a 30. Prosthesis, characterized in that it is made by a method of <sup>claim</sup> ~~claims~~ 16 to 28.
- a 31. Method for making a prosthesis, characterized in that at least one isolating material according to <sup>claim</sup> ~~any one of claims~~ 1 to 4 is used, and at least one investment material containing:
- 10 - 30 wt.-% polyethylene glycol dimethacrylate,
  - 40 - 55 wt.-% polymethyl methacrylate,
  - 5 - 15 wt.-% highly disperse silicon dioxide
  - < 1 wt.-% photoinitiators, stabilizers,
  - 0 - 10 wt.-% polyethylene glycol and
  - 10 - 30 wt.-% of at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA.
32. Method according to claim 31, characterized in that a transparent dental investment material is used, containing:
- 15 - 20 wt.-% polyethylene glycol dimethacrylate,
  - 50 wt.-% polymethyl methacrylate
  - 10 - 15 wt.-% at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA,
  - 10 - 13 wt.-% highly disperse silicon dioxide,
  - 0.4 - 0.6 wt.-% photoinitiators, stabilizers, and
  - 5 - 10 wt.-% polyethylene glycol.
- a 33. Method according to <sup>claim</sup> ~~either one of claims~~ 31 and 32, characterized in that the polyethylene glycol dimethacrylate has a molecular mass > 500 g/mol.
- a 34. Method according to <sup>claim</sup> ~~any one of claims~~ 31 to 33, characterized in that the polyethylene glycol dimethacrylate is solid at a temperature of approximately  $T = + 20^{\circ}\text{C}$ .

*claim*  
 a 35. Method according to ~~any one of claims 31 to 34~~, characterized in that the polymethyl methacrylate has a molecular mass of  $> 160,000$ , an average grain size of  $80 - 140 \mu\text{m}$  and a benzoyl peroxide content  $< 0.1 \text{ wt.-%}$ .

*claim*  
 a 36. Method according to ~~any one of claims 31 to 35~~, characterized in that the polymethyl methacrylate is a copolymer which has been made with up to  $10 \text{ wt.-%}$  comonomers.

*claim*  
 a 37. Method according to ~~any one of claims 31 to 36~~, characterized in that the polyethylene glycol is fluid at a temperature of approximately  $T = +20^\circ\text{C}$  and has an average molecular mass of  $\geq 200 \text{ g/mol}$ .

*claim*  
 a 38. Method according to ~~any one of claims 31 to 37~~, characterized in that the urethane dimethacrylate has a minimum molar mass at the level of  $450 \text{ g/mol}$ .

*claim*  
 a 39. Method according to ~~any one of claims 31 to 38~~, characterized in that the polymethyl methacrylate is in the form of a suspension polymerizate.

*claim*  
 a 40. Method according to ~~any one of claims 31 to 39~~, characterized in that a dental material curable by means of electromagnetic radiation is used as dental plastic.

*claim*  
 a 41. Method according to ~~any one of claims 31 to 40~~, characterized in that retentions are set up after the overmodeling and before the coating.

*Method of using claim*  
 a 42. ~~Use of~~ an isolation material according to ~~any one of claims 1 to 4~~ as isolation against dentin in the direct making of impressions for inlays by means of carving plastics in the mouth.

*Method of using claim*  
 a 43. ~~Use of~~ an isolation material according to ~~any one of claims 1 to 4~~ as isolation against plaster of Paris in carving work for inlays, onlays or crowns.

*Method of using claim*  
 a 44. ~~Use of~~ an isolation material according to ~~any one of claims 1 to 4~~ as protection for polymerized plastic against unpolymerized material in add-ons or repairs, especially for the avoidance of crazing on prosthesis teeth by monomers.